Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Currently Amended) An image quality correcting circuit comprising ~~an~~a ~~(~~luminance level~~)~~ occurrence frequency counter (13) for counting the occurrence frequencies of ~~the~~ plural luminance levels sampled from ~~the~~ video signals inputted to a video signal input terminal (12), a linear interpolator (15) for generating a correcting characteristic line by making ~~the liner~~linear interpolation based on ~~the~~ output points of counted values of the occurrence frequency counter (13), ~~and~~ an image quality corrector (16) for correcting the inputted video signals according to ~~the~~ correcting characteristic points, a plurality of discriminators (17) for determining the occurrence frequencies of plural luminance levels for every predetermined level, a plurality of first counters (19) for counting the occurrence frequencies for every predetermined level discriminated by the discriminators (17), a plurality of comparators (21) for comparing the outputs of the first counters (19) with reference values for comparison outputted from a reference value for a comparison input terminal 11 to clear the first counters (19) by the outputs for comparison and a plurality of second counters for counting the outputs of the comparators (21).

2. (Currently Amended) An image quality correcting circuit comprising a mean value computer 10 for computing the mean value of ~~the~~ luminance levels of every plural picture ~~elements~~element sampled from ~~the~~ video signals inputted from ~~the~~a video signal input terminal (12), ~~the~~an occurrence frequency counter (13) for counting the occurrence frequencies

of ~~the~~ predetermined plural luminance levels processed by ~~the~~a mean value computer (10), ~~the~~a linear interpolator (15) for generating ~~the~~a correcting characteristic line by making ~~the~~ linear interpolation based on ~~the~~ counted value points outputted from the occurrence frequency counter (13), ~~and~~ ~~the~~an image quality corrector (16) for correcting the inputted video signals according to the correcting characteristic line, a plurality of discriminators (17) for determining the occurrence frequencies of plural luminance levels for every predetermined level, a plurality of first counters (19) for counting the occurrence frequencies for every predetermined level discriminated by the discriminators (17), a plurality of comparators (21) for comparing the outputs of the first counters (19) with reference values for comparison outputted from a reference value for a comparison input terminal 11 to clear the first counters (19) by the outputs for comparison and a plurality of second counters for counting the outputs of the comparators (21).

3. (Canceled)

4. (Currently Amended) The image quality correcting circuit defined in ~~claim 3~~claim 1, wherein the occurrence frequency counter (13) comprises the discriminators (17), the first counters, the comparators (21) and the second counters (23), each comprising 16 series circuits, connected with one another.

5. (Currently Amended) An image quality correcting circuit comprising ~~the~~an occurrence frequency counter (13) for counting the occurrence frequencies of plural luminance levels sampled from ~~the~~ video signals inputted to ~~the~~a video signal input terminal (12), a correcting curve generator (25) for generating a new correcting curve based on ~~the~~ counted value output ~~points (data)~~point data of the occurrence frequency counter (13) and ~~the~~ set ~~pints (data)~~point data previously

inserted among the counted value points, ~~and the~~an image quality correcting circuit (16), a plurality of discriminators (17) for determining the occurrence frequencies of plural luminance levels for every predetermined level, a plurality of first counters (19) for counting the occurrence frequencies for every predetermined level discriminated by the discriminators (17), a plurality of comparators (21) for comparing the outputs of the first counters (19) with reference values for comparison outputted from a reference value for a comparison input terminal 11 to clear the first counters (19) by the outputs for comparison and a plurality of second counters for counting the outputs of the comparators (21).

6. (Currently Amended) An image quality correcting circuit comprising ~~the~~a mean value computer (10) for computing the mean value of ~~the~~ luminance levels of every plural picture ~~elements of the~~element of a video signal inputted to ~~the~~a video signal input terminal (12), ~~the~~an occurrence frequency counter (13) for counting the occurrence frequencies of plural luminance levels computed by ~~the~~a mean value computer (10) for every predetermined level, ~~the~~a correcting curve generator (25) for generating a new correcting curve based on ~~the~~ counted value output points ~~(data)~~ of the occurrence frequency counter (13) and ~~the~~ predetermined set points ~~(data)~~ inserted among the counted value ~~data~~output points, ~~and the~~an image quality corrector (16) for correcting the video signal according to the correcting curve generated by the correcting curve generator (25), a plurality of discriminators (17) for determining the occurrence frequencies of plural luminance levels for every predetermined level, a plurality of first counters (19) for counting the occurrence frequencies for every predetermined level discriminated by the discriminators (17), a plurality of comparators (21) for comparing the outputs of the first counters (19) with reference values for comparison outputted from a reference value for a comparison

input terminal 11 to clear the first counters (19) by the outputs for comparison and a plurality of second counters for counting the outputs of the comparators (21).

7. (Currently Amended) The image quality correcting circuit defined in claim 5, wherein the correcting curve generator (25) is designed for generating a new correcting curve by inserting either the counted value output point data of the occurrence frequency counter (13) or the predetermined set point data among ~~the~~ other data~~, for example, between every other data or between every other plural data~~.

8. (Currently Amended) The image quality correcting circuit defined in claim 5, wherein the correcting curve generator (25) comprises a circuit designed for generating a Bezier curve passing ~~the~~through a start point and ~~the~~an end point based on the counted value output point data of the occurrence frequency counter (13) and the predetermined set point data, either one of which is inserted among ~~the~~ other~~, for example, between every other data or between every other plural~~ data.

9. (Currently Amended) An image quality correcting circuit comprising an occurrence frequency counter for counting the occurrence frequencies of ~~the~~ luminance levels of ~~the~~ picture elements of ~~the~~an inputted video signal within N number ~~(N = any integer of 1 or more)~~ of frames, N being an integer of at least 2, a variation controller controlling, for output, the variation of the counted value of the occurrence frequency counter within a period ranging over several times the N-frame period, a linear interpolator for forming a correcting characteristic line by linear interpolation based on the counted value outputted from the variation controller, and an image quality corrector for correcting the inputted video signal according to the correcting characteristic line formed by ~~the~~a linear interpolator.

10. (Currently Amended) An image quality correcting circuit comprising a mean value computer for computing the mean value of ~~the~~ luminance levels of m number ~~(m = any integer of 2 or more)~~ of picture elements of ~~the~~an inputted video signal, m being an integer of at least 2, an occurrence frequency counter for counting the occurrence frequencies of ~~the~~ luminance levels computed by ~~the~~a mean value computer within ~~the~~a N-frame period ~~(N = any integer of 1 or more)~~ for every plural set level ranges, N being an integer of at least 2, a variation controller for controlling, for output, the variation of the counted value of the occurrence frequency counter ranging over plural number of times of the N-frame period, a ~~liner~~linear interpolator for forming ~~the~~a correcting characteristic line by ~~the~~ linear interpolation based on the counted value outputted from the variation controller, and an image quality corrector for correcting the inputted video signal according to the correcting characteristic line formed by the linear interpolator.

11. (Currently Amended) An image quality correcting circuit comprising an occurrence frequency counter for counting the occurrence frequencies of ~~the~~ luminance levels of the picture elements of the inputted video signals within N number ~~(N = any integer of 1 or more)~~ of frames, N being an integer of at least 2, a variation controller for controlling, for output, the variation of the counted value of the occurrence frequency counter ranging over plural number of times of ~~the~~a N-frame period, a correcting curve generator for generating a new correcting curve based on the counted values outputted from the variation controller and ~~the~~ predetermined set values, and an image quality corrector for correcting the inputted video signal according to the correcting curve generated by the correcting curve generator.

12. (Currently Amended) An image quality correcting circuit comprising a mean value computer for computing the mean value of the luminance levels of ~~the~~ m number ~~(m = any integer of 2 or more)~~ of picture elements of ~~the~~ inputted video signals, m being an integer of at least 2, an occurrence frequency counter for counting the occurrence frequencies of the luminance levels computed by ~~the~~a mean value computer ranging over an N-frame period ~~(N = any integer of 1 or more)~~ for every plural set levels, N being an integer of at least 2, a variation controller for controlling, for output, the variation of the counted value of the occurrence frequency counter ranging over ~~the~~a period of plural times of the N-frame period, a correcting curve generator for generating a new correcting curve based on the counted values outputted from the variation controller and predetermined set values, and an image quality corrector for correcting the inputted video signal according to the correcting curve generated by the correcting curve generator.

13. (Currently Amended) The image quality correcting circuit defined in claim 9, wherein the occurrence frequency counter comprises a plurality of discriminators for determining whether or not the luminance level of each picture element of the inputted video signal corresponds to each of plural set levels, a plurality of ~~the~~ first counters for counting the number of times of determination made by each discriminator, a plurality of comparators for comparing the counted value of the first counter with ~~the~~a predetermined reference value for comparison to clear the first counter by the comparison output, and a plurality of ~~the~~ second counters for counting the number of times of the output of the comparator for use as ~~the~~an appearance frequency.

14. (Currently Amended) The image quality correcting circuit defined in claim 10, wherein the occurrence frequency counter comprises a plurality of discriminators for

determining whether or not the luminance levels computed by the mean value computer respectively correspond to the set level ranges, a plurality of ~~the~~ first counters for counting the number of times of determinations made by the discriminators, a plurality of comparators for comparing the counted values of the first counters with ~~the~~ predetermined reference values for comparison to clear the first counters by the output for comparison, and a plurality of ~~the~~ second counters for counting the number of times of outputs of the comparators for use as the occurrence frequencies.

15. (Currently Amended) The image quality correcting circuit defined in claim 9, wherein the variation controller comprises a difference detector, a constant multiplier, an adder and a N-frame delayer; the difference detector outputs the difference between the counted value of the occurrence frequency counter and the output value of the N-frame delayer; the constant multiplier multiplies the output value of the difference detector by 1/X ~~(X = any integer of 2 or more)~~ for output, X being an integer of at least 2; the adder adds the output value of the N-frame delayer to the output value of the constant multiplier; the N-frame delayer delays the sum obtained by the adder by N frames not only for output to the difference detector and the adder but also for output as the variation-controlled output.

16. (Currently Amended) The image quality correcting circuit defined in claim 13, wherein the variation controller comprises a difference detector, a constant multiplier, an adder and an N-frame delayer; the difference detector outputs the difference between the counted value of the second counter and the output value of the N-frame delayer; the constant multiplier multiplies the output value of the N-frame delayer by coefficient 1/X ~~(X = any integer of 2 or more)~~ for output, X being an integer of at least 2; the adder adds the output value of the constant multiplier to the output value of the N-

frame delayer; the N-frame delayer delays the sum obtained by the adder by N number of frames not only for output to the difference detector and the adder but also for variation-controlled output.

17. (Currently Amended) The image quality correcting circuit defined in claim 14, wherein the variation controller comprises a difference detector, a constant multiplier, an adder and an N-frame delayer; the difference detector outputs the difference between the counted value of the second counter and the output of the N-frame delayer; the constant multiplier multiplies the output value of the N-frame delayer by the coefficient 1/X ~~(X = any integer of 1 or more)~~ for output, X being an integer of at least one; the adder adds the output value of the constant multiplier to the output value of the N-frame delayer; the N-frame delayer delays the sum obtained by the adder by N frames not only for output to the difference detector but also for variation-controlled output.

18. (Currently Amended) An image quality correcting circuit comprising ~~the appearance~~an occurrence frequency counter (13) for counting ~~the~~ occurrence frequency data of ~~the~~ plural luminance levels sampled from ~~the~~a video signal inputted to ~~the~~a video signal input terminal (12) for every predetermined level, ~~the~~a correcting characteristic control ~~point~~circuit (29) for selectively outputting ~~the~~an upper limit value when ~~the~~a counted value of ~~the~~a correcting characteristic point outputted from the occurrence frequency counter (13) is greater than ~~the~~a predetermined upper limit value, while selectively outputting ~~the~~a lower limit value when the same is smaller than ~~the~~a lower limit value, ~~the~~a correcting curve generator (48) for generating a correcting curve according to the output of the correcting characteristic ~~point~~ control circuit (29), and ~~the~~an image quality corrector (16) for correcting the inputted video signal according to the

correcting ~~characteristic line~~curve generated by the correcting curve generator (48).

19. (Currently Amended) The image quality correcting circuit defined in claim 18, wherein the occurrence frequency counter comprises ~~the~~a mean value computer for computing the mean value of the luminance levels of ~~the~~ plural picture elements of the video signal inputted to the video signal input terminal (12) and ~~the~~a counter for counting the occurrence frequencies of plural luminance levels computed by ~~the~~a mean value computer (10) for every predetermined level.

20. (Currently Amended) The image quality correcting circuit defined in claim 18, wherein the correcting characteristic point control circuit (29) comprises a control range comparator (43) for comparing ~~the~~a counted value of the correcting characteristic point and ~~the~~a linearly varying upper limit value and lower limit value, a correcting characteristic point selector (47) for selecting the upper limit value, lower limit value or the counted value of the occurrence frequency counter (13) according to the output of the control range comparator (43), and a control counter (40) for controlling the order of processing of the correcting characteristic point.

21. (Currently Amended) The image quality correcting circuit defined in claim 20, wherein the control range comparator (43) comprises ~~the~~an upper limit comparator (41a) for comparing the counted value Pn of the correcting characteristic point and the linearly varying upper limit value an + w and ~~the~~a lower limit comparator (42a) for comparing the counted value Pn of the correcting characteristic point and the lower limit value an - w, and ~~the~~a control range setter (46) comprises ~~the~~an upper limit setter (44a) for setting the upper limit value an + w and ~~the~~a

lower limit setter (45a) for setting the lower limit value an - w.

22. (Currently Amended) The image quality correcting circuit defined in claim 18, wherein the correcting characteristic control circuit 29 comprises ~~the~~a control range comparator (43) for comparing ~~the~~a counted value Pn of the correcting characteristic point with the upper limit values and the lower limit values on ~~the~~a correcting characteristic ~~graphic lines~~line passing through the start point and the end point, which vary quadratically around intermediate portions thereof, ~~the~~a correcting characteristic point selector (47) for selecting the upper limit value, lower limit value or counted value of the occurrence frequency counter (13), and ~~the~~a control counter (40) for controlling the order of processing for the correcting characteristic points.

23. (Currently Amended) The image quality correcting circuit defined in Claim 22, wherein the control range comparator 43 comprises ~~the~~an upper limit comparator 41b for comparing the counted value Pn of the correcting characteristic point with ~~the~~a quadratically variable upper limit value YHn, and ~~the~~a lower limit comparator 42b for comparing the counted value Pn of the correcting characteristic point with ~~the~~a lower limit value YLn, while ~~the~~a control range setter 46 comprises ~~the~~an upper limit setter 44b for setting the upper limit value YHn and ~~the~~a lower limit setter 45b for setting the lower limit YLn.